

An Inaugural

Dissertation

on

Cholera Infantum

by

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of

Virginia

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Introduction

It was my intention to have written an experimental essay, and indeed I had commenced a series of experiments, by dividing the par-vagum of a puppy; with the intention of producing artificial respiration, as soon as natural respiration ceased; and of observing whether any alteration of the venous blood would take place after this; and also whether there would be an absence of animal heat; but my apparatus for performing artificial respiration being defective, I was compelled to abandon it altogether. I then determined to write upon some disease; and as Cholera Infantum is one; the symptoms, and treatment of which, I had a great opportunity of observing during the two last summers I have thought proper, to select this, as the subject of my inaugural dissertation. So sensible am I of

my inability to do justice to this Subject, that no
 inducement whatever would be sufficient to call
 forth my feeble efforts at this particular crisis,
 were it not in compliance, with an indispensable duty
 imposed, by an institute of this university. I must
 therefore plead, the shortness of time allowed; during
 which we have to prepare a dissertation; the improprie-
 ty of founding our theories, upon the basis of our
 own observations, in consequence of extreme youth and
 inexperience; and the necessary engagements in
 pursuits highly unfavourable to fertility in composition,
 or success in scientific research; as an excuse for
 the imperfect nature of this dissertation. It
 would be with great diffidence that I should
 submit this imperfect treatise, to the scrutiny
 of that able tribunal; were I not encouraged
 with the hope of its receiving all the indulgence,
 which candour, with justice can bestow.

Cholera Infantum

This disease is said to be almost peculiar to the United States; and if I were to form my opinion with respect to its occurrence in other countries, from their medical records and publications, on the subject of the diseases of children, I should be led to pronounce it, endemic to this country. I admit that in other countries, there are diseases resembling Cholera Infantum in some respects; but deny that they can be recognised as the true form of this disease. It is a disease attended with great mortality, carrying off hundreds, and thousands of infants every summer, thereby annihilating the fond hopes, of their distressed parents. Notwithstanding the numerous victims yielding to this disorder, annually, the works on this subject, exhibited to the public eye, are few in number. The degree to which it rages, and the

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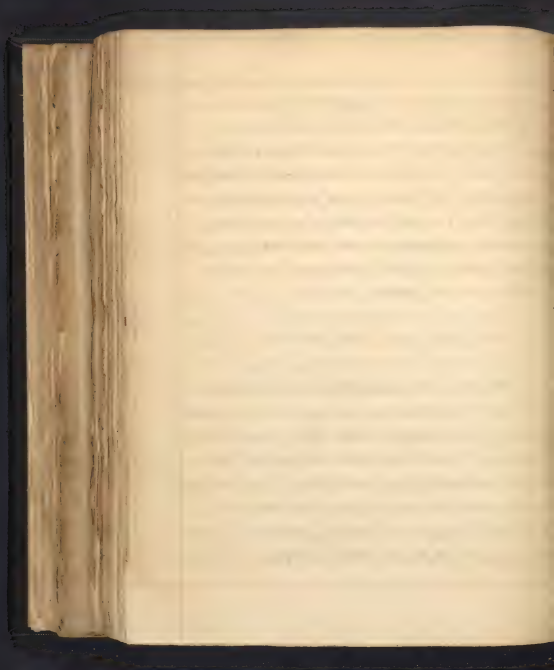
danger attendant upon it, are in every instance supposed to be, in proportion to the heat of the Atmosphere. Of this fact I am fully persuaded, from having observed in many cases a happy change to take place in a cool day; and as soon as it becomes warm there would be an aggravation of all the symptoms.

Symptoms

This disease is frequently ushered in with a looseness of the bowels, or diarrhoea, which may continue several days without the child being in any other way indisposed; but more frequently it is attended with an excessive degree of vomiting, and a high fever. The discharges from the bowels are generally of a green colour, sometimes mixed with slime, and blood, at other times I have seen them quite black. Sometimes worms are discharged in each kind of stools that have been mentioned. At this stage of the disease there are symptoms of great pain. The feet are frequently drawn up to the abdomen, the patients are very restless

so much so indeed that it is impossible to keep them in one position. They are of their natural temperature, or frequently cold, while there is a great degree of heat on the head, shewing that there is determination to that part of the system. The pulse is quick frequent and small. The skin is dry and hot, and there is a great degree of thirst, which is displayed in the child taking every kind of liquid into its mouth with avidity. The head is sometimes so much affected, as to produce symptoms of delirium, and mania. This sometimes in such a degree that the child makes frequent attempts to bite its parent or nurse. The abdomen is almost always enlarged. The skin in the folds of the extremities, and on the neck, often the disease has continued for some days, becomes wrinkled, dry, and dry, and displays a deeper tinge of yellow than any other part of the body. These last symptoms I have never seen mentioned by any author I have read on the subject, but have observed it myself in every case I have seen.

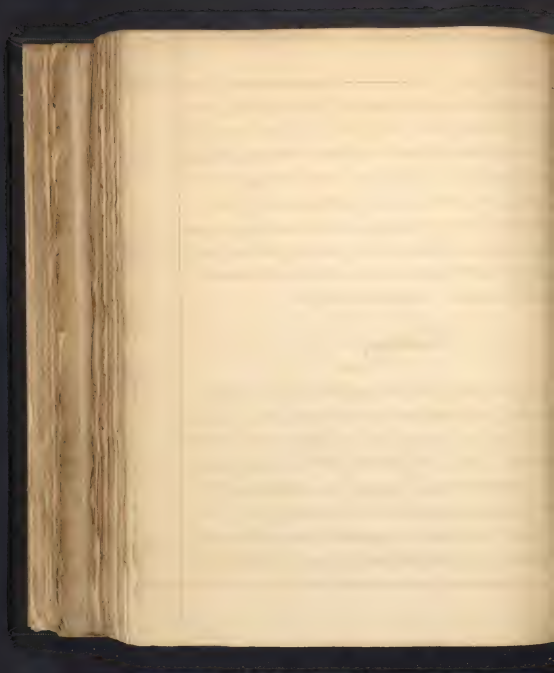
The eyes have a languid, and hollow appearance, and the child frequently sleeps with them half open, and shows



and disposition to rid itself of blood when they light upon the eyes. At this stage the child always lies on its back, and shows no disposition to alter its position. This disease proves fatal sometimes in a few days; but more frequently it is of longer continuance, at length terminating in dissolution with many disagreeable, and distressing symptoms, such as great emaciation, hard spots, singultus, convulsions, a strongly marked hydropic countenance, sore throat and mouth, and sometimes a troublesome cough.

Pathology

Many are the causes to which this disease has been attributed. The fruits of the summer have been considered among the primary causes of this disorder; but to this opinion it may be objected, that we more frequently meet with this disease in large towns, where fruit is not so easily obtained as in the country than we do in country situations. It may also be observed that this complaint frequently attacks very young children who



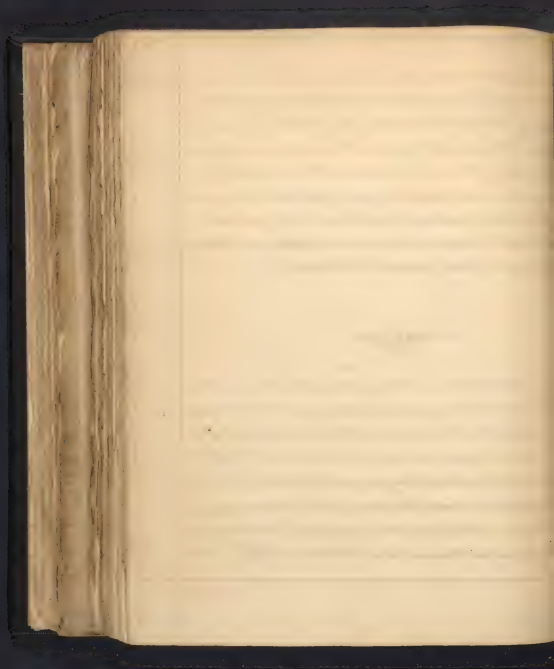
have never tasted fruit. I saw this take place in two instances last summer. It has likewise been attributed, both to worms, and dentition, neither of which do I consider as a primary cause of this disease; because the cases are too numerous where children are affected with this complaint before the age of dentition; and we also know it to be a fact, that this disease never occurs but at one particular season of the year. That dentition and worms sometimes act as exciting causes I do not pretend to deny; but then there must have been previously existing some predisposing cause, without the presence of which this disease could not be excited. That which I consider to be the true cause of this disease, is a vitiated ^{heated} state of the Atmosphere, producing a debilitated state of the Stomach, and bowels and thereby rendering them particularly liable to take on that morbid state of action. The liver is almost always affected, in this disease, but this affection of the liver, I do not consider as direct, and idiopathic, but produced through the medium of sympathy. This diseased state of the liver will be sufficiently evident



on examination after digestion. It is ascertained by dissection, that the viscera of the abdomen receive the whole force of the disease. The effects of inflammation are to be seen through the whole of the alimentary canal. The liver is generally enlarged; and this may very frequently be felt through the abdominal muscles on examination. Having now laid down what I consider to be a correct pathology of Cholera Infantum; I shall proceed to its treatment.

Treatment

In the statement of the symptoms of this disease, I have shown, that it always makes its appearance, with considerable disorder of the stomach and bowels. The presence of such symptoms would lead me to conclude, that the first indication in attempting a cure, should be, to clear the stomach, and bowels, the most effectual means of doing which, are emetics. These not only evacuate the stomach and bowels; but at the same time determine to the ^{chyliferous} vessels in that



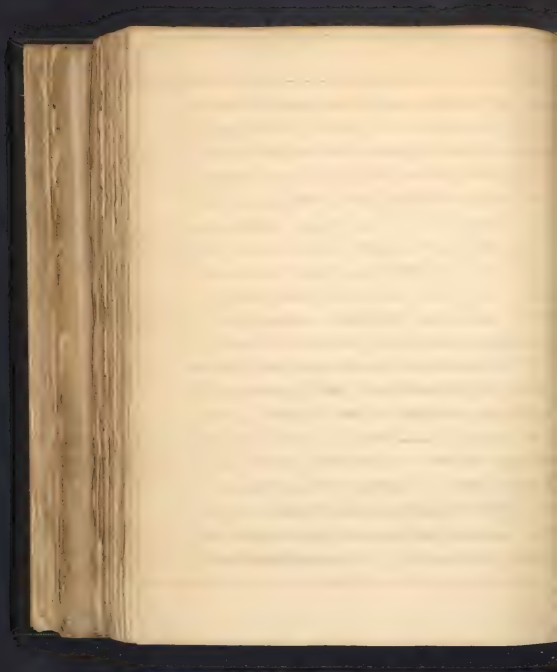
may eliminate disease from the alimentary canal. Sometimes happens, however, before an emetic is administered, and even after its operation, that the stomach is so irritable as to reject every thing immediately on its being swallowed: In such a case, our object should be directed to allay this irritation as speedily as possible. For the accomplishment of this end I would recommend, the use of anodyne injections, together with warm fomentations, to the Epigastric region. I have seen a little mint bruised, and steeped in warm Whisky, or Brandy, and then applied over the region of the stomach: attended with very happy effects. Equal parts of new milk, and lime water, administered internally will frequently allay excessive irritation of the stomach. Should these remedies fail in producing the desired effect, we should resort to the application of a Sinapis m., or blistering plaster over the epigastric region. At this period of the disease, if there should be much fever, and symptoms of inflammation I would not hesitate to bleed, as I believe it is absolutely necessary to resort to bloodletting in the cases of children, as in those of adults. To this practice



It should be led by bearing in mind the appearances presented
 on dissection. But I wish not to be understood as recommending
 this remedy indiscriminately; so far from it am I, that I
 believe the lancet is attended with more evil than
 good, unless regulated by a true judgement exercised with
 discrimination. After we have succeeded in allaying
 the irritability of the stomach, purgatives should be
 resorted to. Here, there is some difference of opinion,
 as to what article should be preferred for this purpose.
 Some recommend Castor Oil, Magnesia, and Rhubarb,
 in preference to any other; but the article which I should
 prefer, above all the rest is Calomel. This medicine not
 only possesses the advantage of being in measure to the
 patient; in consequence of which it may be administered
 with less difficulty; but it is retained on the stomach
 when every thing else is rejected. Another very great
 superiority which it has over the other purgatives is,
 that it evacuates the alimentary canal more thoroughly
 than other medicines, which would operate with the same
 degree of violence. It is also the direct combination

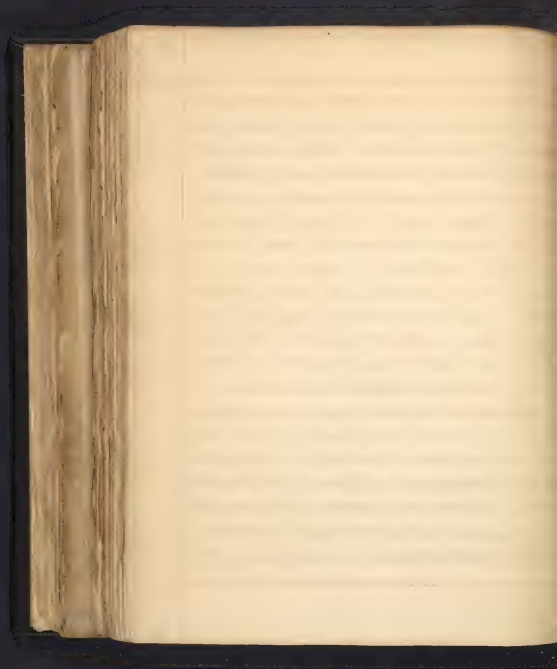


of opium and calomel is highly recommended in Chapman,
 then whom I could not adduce higher authority. If we
 only suffer ourselves to reflect on the modes of action of
 these two articles, we shall be led to conclude that they
 must be esteemed as highly useful at this period of the
 disease. Perhaps it may be said to some that as this is
 a disease of an inflammatory nature, opium would
 only serve to increase these symptoms. ^{But} I must
 confess is entirely foreign to my idea of the effects of
 opium in this disease. That this is a disease of an
 inflammatory nature, I have asserted in a preceding
 part of this dissertation; but consider this inflammation
 to be the effect of no other cause than a continuance of
 a great degree of irritation in the alimentary canal;
 for the removal of which, there can be no medicine
 better adapted; than a combination of opium, and
 calomel; for while one is allaying the irritation and
 spasms of the alimentary canal, the other is so
 active in removing the feculent contents. After the
 alimentary canal has been once cleansed of its irritating



contents we should leave the exhibition of purgatives, and
 where much mischief is required to be done by using these
 medicines to so great an extent. Instead of the sweep-
 fasts in this stage we should resort to cathartics
 combined with other medicines, in such a way as to
 produce a determination to the surface, at the same
 time that it calms the irritation and soothes pain. For
 this purpose, a combination of opium, calomel, and
 ipecac, is admirably adapted in the following prescription.

Opium grs	} This is to be divided into eight powders, one to be given every hour or two hours if necessary. These powders are a little unpleasant; and very frequently the stomach is in such an irritable state, that this would be rejected immediately on being taken. In such a case I would recommend the use of the warm bath; this determines to the surface, and tends to allay irritation and spasm. Often have I seen the tender infant so much distressed with the spasms of pain and with a dry and hot skin, that it required the almost effortions of its mother to hold; but as soon as it has been plunged
Calomel grs	
Ipecac grs	



into the warm bath it becomes immediately composed; and after it has been removed and wiped perfectly dry a gentle diaphoresis comes on, to the great relief of those distressing symptoms. In combination with the warm bath, I have seen the cutaneous fulour and with great success. There is always some acidity of the stomach at this stage, which the chalk that enters into this preparation, is admirably calculated to counteract. The lincluse of opium, which is another ingredient of this preparation, is highly beneficial in allaying irritation, Trinitina, a nitrous mass, are also for restraining that looseness of the bowels, which is ^{most} always an attendant at this stage of the disease. The preparation which I have now send, is made according to the following formula.

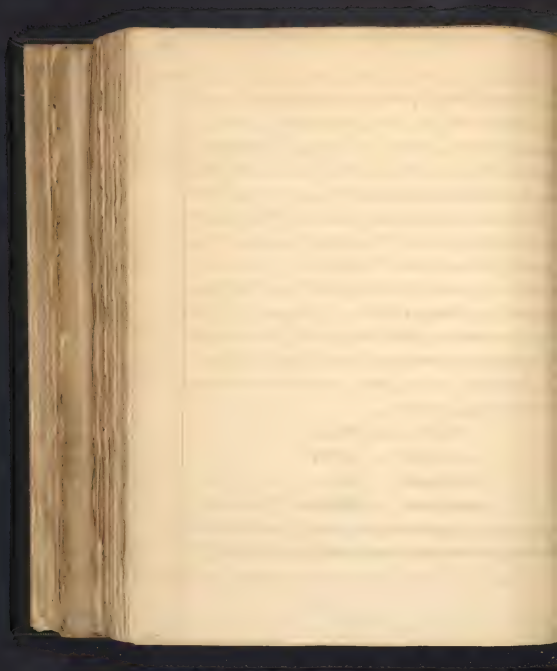
R Colica preparata ℥ij

Tindura Opii ℥i XV

Suban albi ℥i

Uvae ursae ℥ij thrice; then add a few

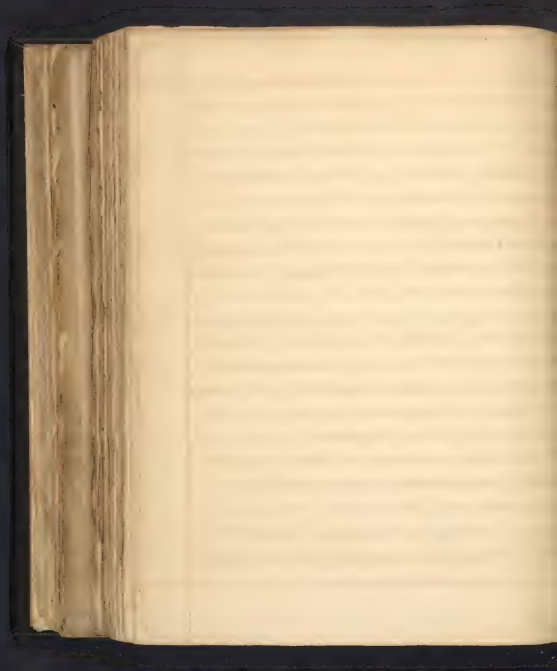
drops of oil of peppermint. After having made use of the preceding remedies the disease sometimes appears not to



be at all disposed to yield, but still continues to harass the patient with by implication, violent pain, great degree of heat, and swelling of the abdomen. In such a case, I should have no hesitation in having, immediate recourse to the application of blisters over the abdomen. In all febrile diseases of children, we must be very sensible, that there is a preternatural determination of blood to the brain, in consequence of that vessel being larger in proportion to other parts of the body, than it is in adults; and not only this, but even the very symptoms of the disease indicate that such must be the case. We should not suffer ourselves to be perfectly misled by this fact, because on dissection, we discover no morbid appearances in the brain; for in those cases where congestion only takes place; it is easy to conceive that all morbid appearances in the brain may cease after death; as that the effusion of blood in the skull should disappear after the retreat of the blood from the extrinsicks of the vessels in the locomotors of life. This is not uncommon for morbid affections of the brain, to leave either slender, or no marks of disease after



death. This being admitted as a fact we should be very careful
 to elviate all symptoms of determination of blood to the
 head, for I have seen a case of Cholera Infantum terminate
 in dissolution, with every symptom of Hydrocephalus
 Intermus, and if I mistake not, Dr Rush in his writings
 mentions a case of Hydrocephalus, which was produced
 by Cholera Infantum. The remedies most effectual in
 combating symptoms of determination to the head, are
 application of cold to the head; and topical depletion by
 leeches and cupping. Though these remedies should fail,
 let us not give our patient over to despair, our resources
 are ample, and it becomes us as physicians, entrusted
 with the lives of our fellow mortals, to avail ourselves
 of these resources as long as there is one spark of vitality
 remaining in the system. The extremities may take on the
 cold garb of the grave, and the arteries may cease to
 pulsate in the extremities, yet let not this disengage us
 from a continuance of our remedies; rather let us
 stimulate us with redoubled energy, to combat the
 violence, with the grave, for as long as any symptoms of life



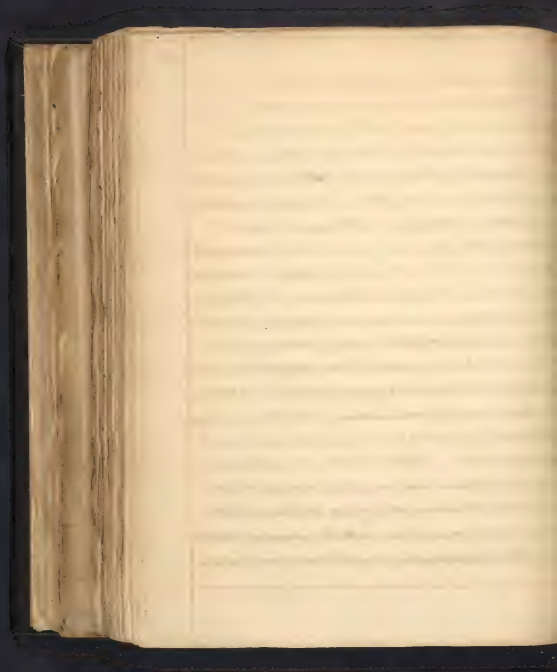
remain in the distress of the tender infant, & long should we continue to hope and to realize this hope, by a steady and active perseverance, in our plan of treatment.

After a failure of the preceding remedies, what might we not expect from a mercurial course pushed, if possible to a slight salivation? To give an answer to this question, let us recur to the pathology of this disease, stated in a preceding part of this dissertation; and also to the appearances pointed out in dissection. Do not then inform us, that the liver is partly the seat of this disease; and that this organ is very much diseased in all cases? Colomel has undoubtedly a specific relation with the liver; by exciting in it a degree of action compatible with its mode of vitality; then properly administered it is followed by an increase of biliary secretion, and this secretion is almost in every instance of a better quality; and considering as we do the bile to be the natural stimulus of the intestines, it must of course improve the digestion, while the flow relieves the congested vessels. In this way the improvement consequent on bilious stools in this disease may be accounted for. In the stomach there is a diminution



of irritability in the bowels there is a more regular contractions and there is a more vigorous determination to the surface.

If the internal exhibition of Mercury in the form of Calomel. be not productive of the desired effect, I should then resort to the aid of the ointment rubbed over the region of the liver, as well as on the joints. Although the worst symptoms of this disease may have been arrested, there still remain some, which it will be necessary to attend to such as diarrhoea, tormina and tenesmus. At this stage of the disease, there are some medicines admirably calculated to produce beneficial effects; among which, may be ranked the *Rubus Procerus*, *Haematoxylon Campechiense*, *Crotaceum*, *Islops*, and anodyne injections. The *Rubus Procerus* is generally administered in decoction, and may be prepared, by putting an ounce of the bruised root to a pint of water. Prepared in this way I have seen the use of it, attended with very beneficial effects; for while it tends to restrain the purging, and looseness of the bowels, it at the same time imparts a degree of tonic to them. The *Haematoxylon* may be considered as an



equally valuable remedy, prepared and administered in the same way. But while we are endeavouring to restrain this looseness of the bowels, we should be equally active in staying the tormina and tenesmus, which are both sometimes very troublesome at this period; for the accomplishment of which, I know of no remedies superior to the chalk pills, and anodyne injections. As the child must necessarily be very much debilitated after the continuance of such a disease for any length of time, it is necessary to administer such medicines as will restore tone to the stomach and bowels, and through the medium of them, to the general system. The remedies best adapted for this purpose are, a decoction of Peruvian bark, with a little cinnamon added to it; the infusions of Columbo, Ququina, and Gentian. Moderate exercise should be considered as an invaluable remedy throughout the whole course of the disease; but more especially in the latter stage. It is said that this has been a means of restoring many children, after every other remedy has failed. This I do not think can be too strongly

imposed on the minds of physicians, for I have seen
 the most marked benefit resulting from the small degree
 of exercise from carrying it about in the arms, when the
 parents have been in such indigent circumstances, as
 not to afford them any other mode of conveyance.
 This is not all that is necessary in the treatment of this
 disease, for without a strict attention to the diet, it is
 impossible that our remedies can have the desired effect.
 The diet of children who are weaned, should consist of
 farinaceous substances, such as Arrow root & sago, boiled
 without any fatty substance, baked brown, and grated
 into boiled milk. I believe the mother's milk the
 best food for children who are not weaned, and the
 mother should never be suffered to wean the child
 under nine or twelve months, unless circumstances
 render it absolutely necessary.

